

IRRIGATION RATESETTING DOCUMENT

CENTRAL VALLEY PROJECT

CALIFORNIA

Description of the
Component With Individual Contractor Deficits
Ratesetting Method

1988

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PURPOSE AND BACKGROUND

The purpose of this document is to present the procedures and methodologies utilized in calculating water rates for the Central Valley Project (CVP) under the Component with Individual Contractor Deficits Ratesetting Method and to provide a brief history of the CVP and the different ratesetting methods that have been utilized since its beginning. Also included is a description of the cost allocation procedures used in the CVP, a description of many of the premises included in the ratesetting method and a detailed description of the procedures utilized in computing water rates under the Component with Individual Contractor Deficits Ratesetting Method.

Background

The CVP was first authorized by the California Legislature as a State project. Approved by the Governor on August 5, 1933, the CVP immediately became the subject of a State referendum petition which required that the CVP be approved by the electorate. The election was held in December 1933, and the CVP was approved by the voters.

State officials then turned to the problem of financing the CVP. The State Legislature had authorized the sale of public bonds as a means of financing the construction of the CVP, but the public bonds were found to be unmarketable. Requests for Federal grants and loans to aid in the financing of the CVP were submitted and turned down. Because of the financing difficulties, State officials then asked the Federal Government to undertake construction of the CVP.

CVP Legislative History

The U.S. Congress authorized construction of the initial CVP facilities in the River and Harbors Act of August 30, 1935 (49 Stat. 1028, 1038). The Act authorized the U.S. Army Corps of Engineers to construct the following project facilities: the Shasta, Keswick and Friant Dams, the Tracy Pumping plant, the Delta-Mendota and Friant-Kern Canals, and the Contra Costa Canal and related facilities. On September 10, 1935, the President signed an Executive Order which transferred \$20 million of Emergency Relief Act funds to the Department of the Interior for construction of Friant Dam and the other features of the initial CVP. The finding of feasibility on which to base the reauthorization of the CVP under provisions of the Reclamation Act of June 17, 1902 (32 Stat. 388), and all acts amendatory and supplementary thereto, was approved by the Secretary of the Interior and the President on October 26, 1935 and December 2, 1935, respectively.

Congressional reauthorization of the initial CVP facilities under Reclamation law was provided for in Section 2 of the River and Harbors Act of August 26, 1937 (50 Stat. 844) and in the River and Harbors Act of October 17, 1940 (54 Stat. 1198). Since then, the Congress has authorized the construction and operation of several additional CVP units, divisions and facilities.

In many cases, the legislation authorizing the construction and operation of a new CVP unit, division or facility included language reauthorizing the entire CVP. Regardless of whether or not the entire CVP was reauthorized, however, the authorizing legislation consistently contained language requiring the new unit, division or facility to be operated and repaid as an integral part of the CVP.

Additional units and facilities authorized as integral parts of the CVP include: the American River Division (Folsom, Nimbus, and Sly Park Dams and related facilities) (Act of October 14, 1949, 63 Stat. 852); the Sacramento Valley irrigation canals (Red Bluff Diversion Dam, Corning Canal, and Tehama-Colusa Canal) (Act of September 26, 1950, 64 Stat. 1036); the Trinity River Division (Act of August 12, 1955, 69 Stat. 719); the San Luis Unit (June 3, 1960, 74 Stat. 156); the New Melones, Hidden and Buchanan Projects (October 23, 1962, 76 Stat. 1191 and 1192); the Auburn-Folsom South Unit (Act of September 2, 1965, 79 Stat. 615); the San Felipe Division (Act of August 27, 1967, 81 Stat. 173); the Black Butte Project (Act of October 23, 1970, 84 Stat. 1097); and the Allen Camp Unit (Act of September 28, 1976, 90 Stat. 1328).

Water supplies produced by the CVP are marketed primarily pursuant to the Reclamation Project Act of August 4, 1939 (53 Stat. 1187). This Act provides the basic concepts and provisions included in all CVP repayment and water service contracts. In addition, the Acts of July 2, 1956 (Public Law 84-643, 70 Stat. 483) and June 21, 1963 (Public Law 88-44, 77 Stat. 68) contain provisions applicable to the renewal of Federal Reclamation water service contracts.

The Reclamation Reform Act of 1982, (Public Law 97-293, 96 Stat. 1263) was signed by the President on October 12, 1982. While retaining the basic principle of limiting the amount of owned land which may receive irrigation water deliveries from Reclamation projects, the Act introduced the concept of full-cost pricing (including interest on the unpaid plant investment) for certain irrigation water deliveries to leased lands.

The Act of October 17, 1986, (Public Law 99-546), was signed by the President on October 27, 1986. This Act codified certain existing CVP ratesetting practices (such as the automatic adjustment of water rates in new and/or amended contracts to ensure payout of the existing Federal investment by the year 2030) and provided for some new CVP ratesetting provisions including the last sentence in Section 105 with respect to the adjustment of individual contractor's ability to pay determinations every five years and Section 106 which requires that

each new or amended contract for the delivery of water from the CVP include provisions requiring each contractor to pay any annual deficit incurred by that contractor together with interest on any such deficit which arises on or after October 1, 1985.

History of CVP Water Ratesetting Policies

1940 - 1969

The first CVP water service contracts were negotiated and entered into during the late 1940's. The initial CVP water rate structure consisted of a graduated scale, ranging from \$2.00 per acre-foot for irrigation water in the Sacramento Valley (near the source of supply) to \$3.50 per acre-foot for irrigation water service in the San Joaquin Valley (south of the Delta formed by the Sacramento and San Joaquin Rivers). The same water rates applied to all of the contractors in each service area regardless of the contract date. While contracts did not include provisions for rate changes, uniform contract expiration dates were used in some service areas in order to facilitate service area contract negotiations upon renewal.

The San Luis Unit was authorized in 1960 based on a feasibility report which contained an irrigation water service rate of \$7.50 per acre-foot. This rate was included in the San Luis service area contracts with the rate remaining constant throughout the 40-year term of the contracts.

By the mid-1960's, the repayment status of the CVP indicated that water rates were too low and that fixed rate contracts for 40 years would not produce sufficient revenues to recover both increasing annual operating costs and the sunk capital investment costs. Steps were taken to modify the ratesetting policy for new contracts in order to provide for rate adjustments during the term of each new contract and ensure the recovery of the escalating cost of operations.

1970 - 1980

Major revisions to the CVP ratesetting policy were proposed in 1970. Under that proposal, irrigation water service rates would be based on 75 percent of the irrigator's available payment capacity, but the rate structure would include separate segments for annual operating costs and capital investment costs. The annual operating cost segment was to be adjustable at 5-year intervals in order to facilitate the full recovery of actual operation, maintenance and replacement expenses. The capital segment was to be adjusted in the 20th and 30th years of the 40-year water service contract, and the adjustment was to be based on a reevaluation of the irrigator's payment capacity in each of those 2 years.

The 1970 ratesetting policy proposal was based on three major component charges for services provided by the CVP:

- A Delta Service Charge for storage north of the Delta. This component would be subject to change in 1996 and every 5 years thereafter, with a maximum change of 20 percent for each 5-year adjustment. Further, financial assistance in the form of municipal and industrial water supply revenues was specifically included in the irrigation water rate calculations. The amount of aid was limited to 20 percent of the total revenue credited for repayment of the Delta service costs. The 1996 date was selected because it coincided with a major portion of the CVP's municipal and industrial water contract renegotiations.
- A Conveyance Charge to reflect the contractor's share of CVP costs associated with the specific conveyance facilities being used to serve the contractor. This component was adjustable 5 years after the initial water delivery date and at the end of each 5-year period thereafter.
- A Pumping Charge for the use of CVP pumping facilities in the delivery of water to the contractor. The pumping charge was adjustable at the same time as the Delta Service Charge.

Implementation of the irrigation portion of the 1970 proposed policy never occurred because there were no new CVP irrigation contracts executed between the completion of that policy and 1974 when revisions to the ratesetting policy were adopted.

In 1974, the concept of determining CVP water rates based on the actual cost of providing water service to each contractor (cost-of-service) was introduced. Under this concept, water rates for new contracts were to be equal to the lesser of the cost-of-service or the irrigator's payment capacity. The repayment of irrigation capital costs that were beyond the irrigator's ability to pay were to be recovered from the surplus revenues from power and municipal and industrial water sales.

In the cost-of-service concept, the single or "pooled" storage procedure was extended from just those north of the Delta (Delta Service Charge), to the pooling of the costs of all of the CVP storage reservoirs. Therefore, all CVP water users would share equally (on a cost per acre-foot basis) in the repayment of total CVP storage costs. It was proposed that all conveyance charges would be "pooled" and a single CVP-wide charge would be made for conveyance services received. Accordingly, all contractors requiring conveyance services would also share equally (on a cost per acre-foot basis) in the repayment of the conveyance costs of the CVP.

Along with this major change in the rate determination process, all new CVP water service contracts executed during the period 1974 through 1978 included some form of provision for water rate adjustments. Between 1979 and the enactment of the Reclamation Reform Act of 1982, all new CVP irrigation water service contracts included a provision for rate adjustments at 5-year intervals.

Another major revision in the irrigation ratesetting policy was the establishment of a minimum CVP water rate of \$3.50 per acre-foot. That rate was deemed sufficient when it was established as the rate met all costs associated with the delivery of CVP water from storage. It was anticipated that over time the minimum charge would have to be adjusted to reflect increases in project construction costs and annual operating expenses.

In January 1978 and September 1979, the Office of the Inspector General of the Department of the Interior issued audit reports which were critical of several of the water marketing, financial and ratesetting practices in the CVP. These reports stated that all of the reimbursable functions of the CVP were in serious financial trouble and would continue to be so unless basic operation policies, contract terms, rate adjustment provisions and, possibly, existing laws were changed. The audit reports stated that the problem was the cumulative result of actions taken during many years and that the Bureau of Reclamation, the Department of the Interior and Congress must share the responsibility for this situation.

1981 - 1983

In January 1981, a draft CVP ratesetting policy was released for public review and comment. The draft policy included four types of service charges: water marketing, storage, conveyance and project pumping. The charge for each service included components for recovery of the applicable capital and annual operating costs. The total rate to be applied to each water user depended on the number of CVP services required to deliver water to that particular contractor. The per acre-foot irrigation charge was based on the lesser of the actual cost-of-service or the irrigator's payment capacity, but in no case was the irrigation rate to be less than the actual operation, maintenance and replacement expenses. In addition, the draft policy included the \$3.50 per acre-foot minimum charge for CVP irrigation service.

The 1981 draft policy provided for the repayment of CVP costs allocated to irrigation within 50 years from the time each major CVP addition became operational. Under this concept, revenues in excess of actual operating expenses were applied towards the repayment of the older additions first, thereby meeting the "repayment within 50 years" criterion. The water deliveries used in the water rate calculations were the total of the most recent forecast of CVP irrigation deliveries for the next 50 years, beginning in the year in which the calculations were made. The deliveries in any given year were subject to the maximum available capacity of the CVP facilities included in the cost base.

Also included in the draft ratesetting policy was a provision for rate adjustments every 5 years. Accordingly, the water service rate for each contractor would be adjusted every 5 years to reflect the plant

investment projected to be in-service during the next 5-year period and the annual operating expenses associated with the in-service facilities. In this way, each irrigation water user would be paying for an equitable share of the CVP services expected to be made available during the 5-year period.

Public hearings on the draft CVP water ratesetting policy were held at several locations, and a formal comment period was established for the purpose of obtaining input on the draft policy from CVP water users, various governmental entities, special interest groups and the general public. Many comments were received and most of them suggested that modifications to the proposed policy were needed or that other ratesetting options should be considered.

By memorandum dated April 10, 1981, the Office of the Inspector General stated that the draft ratesetting policy resolved some, but not all, of their audit concerns. The unresolved issues have remained as such in the Inspector General's semiannual report on outstanding issues.

The draft 1981 ratesetting policy was further impacted by the enactment of the Reclamation Reform Act of 1982, which included several financial and repayment requirements that were neither provided for, nor envisioned, in the draft proposal.

1984 - Present

In response to the above described factors, the draft 1981 ratesetting policy was reanalyzed, proposed methodologies were revised to reflect the public comments previously received, principles and requirements of the Reclamation Reform Act of 1982 (RRA) were incorporated and alternative ratesetting methods were developed. The resulting ratesetting proposal provided several optional methods and was released for public review and comment in April 1984. In May 1984, public workshops were presented in three different locations to discuss the ratesetting methods and to answer questions. Subsequently, three formal public hearings were held to receive testimony and comments and all comments and statements received at the public hearings were recorded for use in finalizing the ratesetting approval.

The formal comment period was extended twice because of the interest and efforts demonstrated by the persons reviewing the ratesetting proposals. On September 21, 1984, the comment period officially closed and the internal finalization of the ratesetting policy began.

The CVP water users, governmental entities, special interest groups and other interested parties provided extensive comments on the ratesetting options included in the April 1984 proposal. In response to these comments, the Bureau developed and evaluated several additional ratesetting methodologies. The number of optional CVP ratesetting methods was eventually reduced to the six considered the

most viable. After water rates were calculated under each of these six ratesetting methods, each of the methods received extensive review and analysis at both the Regional and Washington levels.

In the final stages of these evaluations, the Congress enacted Public Law 99-546. Section 106 of that Public Law mandated the determination of individual contractor repayment and/or deficit balances and precluded the adoption of CVP ratesetting options previously under consideration that would have pooled operation and maintenance deficits CVP-wide for repayment. Additionally, this Public Law provided that interest would be calculated on operation and maintenance deficits accruing on or after October 1, 1985.

On May 4, 1987, the Assistant Secretary of the Interior for Water and Science proposed the Component with Individual Contractor Deficits Ratesetting Method as the new irrigation ratesetting policy for the CVP. Adoption of the proposed policy was subject to the results of a 60 day public review and comment period with the policy to become final in 120 calendar days unless the public comments justified reconsideration of the proposed policy.

Informal workshops to further explain the proposed ratesetting policy and the applicable supporting calculations were held on June 1 and 4, 1987 and a public hearing was held on June 16, 1987. A total of 397 public comments were received which were determined to be applicable to various provisions of the proposed ratesetting policy or applicable Reclamation laws. All comments applicable to the proposed ratesetting policy were reviewed, summarized and collated into a document entitled "Summary of Irrigation Ratesetting Policy Public Review Comments and Responses". This document summarizes the 397 public review comments into 91 general comments and provides responses to each of the generalized comments.

After a thorough review of the comments, it was determined that the expressed concerns were not significant enough to justify reconsideration or amendment of the proposed ratesetting policy. A copy of the "Summary of Irrigation Ratesetting Policy Public Review Comments and Responses" will be sent to each of the participants in the public review process upon formal approval of the proposed ratesetting policy.

As of March 1, 1988, the Component with Individual Contractor Deficits Ratesetting Method is in the offices of the Secretary of the Interior for adoption as the irrigation ratesetting policy for the CVP.

CVP COST ALLOCATION PROCEDURES

The cost allocation of the CVP plant-in-service investment is reviewed and updated annually to reflect: any additions to, or retirements from, the plant-in-service investment account; the adjustment to the historic data base to reflect another year's actual CVP water and power deliveries; and any changes in the water and power deliveries projected to be made during the remainder of the 50-year repayment period (based on the in-service date of the last major facility). A general description of the plant-in-service investment cost allocation process is detailed below.

Plant-in-service investment costs are first allocated among the authorized CVP purposes (e.g., flood control, navigation, water supply and power). Costs allocated to the water supply purpose are then suballocated among various functions, one of which is irrigation, based on each function's proportionate share of the total of the past, present and future CVP water deliveries. Similarly, CVP hydroelectric power generation and transmission costs are suballocated between commercial sales and CVP project use functions based on each function's share of the total past, present and future CVP power uses. Costs allocated to the CVP project use power function are then further suballocated among various CVP water supply functions (including irrigation) based on each function's share of the total of past, present and future CVP project use power uses.

Actual annual operating expenses are allocated at the close of each fiscal year. At year end, operation, maintenance and replacement costs incurred by the CVP during the previous 12 months are allocated among the authorized project purposes and then suballocated within the water supply and power functions. However, instead of allocating annual operating costs on the basis of past, present and future data as described above, the allocation is based on each function's share of the CVP water and power deliveries made during that year.

The plant-in-service and operation expense allocations are used to determine the water supply and project use power costs allocated to the irrigation and municipal and industrial functions and detail the costs to be recovered from these two functions through the water service rates.

RATESETTING POLICY DESCRIPTION

Legal and Policy Considerations

The policy responds to the concerns of the Office of the Inspector General. That office has reviewed the proposed policy (as well as various other ratesetting options) and has found that the Component with Individual Contractor Deficits Ratesetting Method will satisfy that office's recommendations contained in the CVP audit reports of January 1978 and September 1979 with respect to the repayment of CVP costs allocated to the irrigation function.

The formulation of the ratesetting policy is a Federal action qualified for a categorical exclusion from formal compliance with the National Environmental Policy Act of 1969, pursuant to 516 DM 6, Appendix 9.4.D(5).

The ratesetting policy anticipates that only a limited amount of power revenue assistance will be required to repay the irrigation function of the CVP by the end of the year 2030.

The Office of the Solicitor has reviewed the ratesetting policy and found it to be legally sufficient with respect to Reclamation Law, including Sections 105 and 106 of Public Law 99-546.

Policy Provisions

The provisions of the Component with Individual Contractor Deficits Ratesetting Method include the following:

- The policy will recover the United States' investment, including any operation and maintenance deficits applicable to CVP contracts, within a definite 50-year repayment period terminating in year 2030, as required by Section 105 of Public Law 99-546. This block repayment method supercedes the previous "rolling repayment" method used for computing CVP water rates.

- New 50-year repayment periods will be established for the capital cost of major rehabilitations and new facilities added to the CVP. All other construction and rehabilitation costs affecting existing facilities will fall within the initial 50-year repayment period ending in year 2030.

- Individual contractor accounting is maintained for repayment accountability, and O&M deficits are accumulated for and will be repaid by each contractor under the terms of each new or amended contract, as required by Section 106 of Public Law 99-546.

- The policy honors the provisions of existing CVP water service contracts and requires the application of cost-of-service water rates for all new and renewed water service contracts and amended contracts described in section 203(a)(2) of the RRA. The policy also provides for the automatic adjustment of cost-of-service water rates on an annual basis. This is in accordance with Section 105 of Public Law 99-546.

- The rate computation procedures are based on cost-of-service with capital costs amortized over a 50-year period. Water rates are based on the "pooled and averaged costs" approach in accordance with the "operationally and financially integrated project" concept initially established by Congress and reaffirmed each time the CVP was reauthorized to include a new unit.

- There are no minimum rates (such as the \$3.50 previously used in the CVP). Cost-of-service rates are used unless the contractor's ability to pay is limited by a documented payment capacity limitation (payment capacity limitations are discussed subsequently). The cost-of-service rates reflect credits for past capital payments and miscellaneous receipts.

- The cost-of-service water rates apply to all types of water within the CVP, including Class 1, Class 2 and the storage and/or conveyance of non-project water in CVP facilities. All CVP irrigation cost-of-service and full cost pricing determinations are made in accordance with the ratesetting policy.

- The cost-of-service water rates are composed of a unique assembly of cost components frequently referred to as "cost pools." Each contractor pays a water service rate encompassing a proportionate share of the cost pools associated with the specific service required to provide that contractor with CVP water. A description of the various cost pools involved is presented subsequently.

- All of the costs of those CVP facilities in-service are included in the irrigation water rates. The cost of facilities not being fully utilized (unused capacity) are only deferred if Congress has specifically authorized the deferral of these costs.

- The ratesetting policy continues to recognize the ability to pay concept that has been used for a number of years in irrigation water contracting. Under this concept, the actual charge to the individual contractor will be the lesser of the cost-of-service, or 100 percent of the individual contractor's payment capacity. At a minimum, however, the water rate charged will cover the operation and maintenance costs applicable to the delivery of water to the contractor. The difference between the individual contractor's cost-of-service water rates and ability to pay will be assigned to the power function for repayment.

Where there is a question about the individual contractor's ability to pay, the contractor can prepare, or have prepared at his expense, an acceptable payment capacity analysis. The contractor will be responsible for the Bureau's costs in reviewing and approving the analysis.

- All new or amended contracts will contain provisions for redetermination and adjust of contractor's ability to pay at 5-year intervals, pursuant to Section 105 of Public Law 99-546. As a minimum, the water rate will cover the annual O&M costs applicable to water delivery if payment capacity is employed as the ratesetting criteria.

- Interest will be charged on all O&M deficits incurred on or after October 1, 1985, pursuant to Section 106 of Public Law 99-546. Transactions (either net repayment or deficits) prior to that date will not be considered in determining the interest bearing deficit amount although subsequent transactions will impact the interest bearing deficit and the applicable interest calculations.

- The rate of interest to be applied to the O&M deficits will be determined annually by the Department of the Treasury in accordance with the criteria provided in Public Law 99-546. The rate will be applied using compound interest procedures to any contractor's deficit accruing or accumulating on or after October 1, 1985.

- The costs of isolated or out-of-basin facilities are the direct repayment responsibility of the contractor (or group of contractors) who benefit from the services provided by the facilities. Accordingly, repayment for operation of isolated or out-of-basin facilities, such as those associated with the San Felipe Unit located west of the Gabilan Mountain Range near Monterey Bay, will not be shared by the other CVP contractors, but will be paid for by the out-of-basin contractors.

COMPONENT WITH INDIVIDUAL CONTRACTOR DEFICITS

RATESETTING METHOD

Description of Ratesetting Method

The Component with Individual Contractor Deficits Ratesetting Method provides for a block repayment procedure with 50 years to repay all of the costs included in that block of costs. This method abandons the historic procedure of extending the repayment period of the entire CVP each time a new facility is added to the CVP (this was known as the rolling repayment or rolling 50 procedure).

While it is expected that construction will continue for some time on the CVP, the initial construction period for repayment purposes is calculated from the date the most recently completed major CVP facility (the New Melones Dam and Reservoir) was included as a part of the CVP. Therefore, the plant-in-service costs at the end of fiscal year 1980 must be repaid within 50 years, or by the end of fiscal year 2030. This period conforms with the time frame specified by Public Law 99-546. New repayment periods will be established for the capital costs of major rehabilitations and new facilities or units added to the CVP. However, all other construction costs affecting existing facilities will fall within this initial 50-year repayment period.

The Component with Individual Contractor Deficits Ratesetting Method includes individual contractor repayment or deficit balances in the determination of contractor water rates. The terms "deficit" or "operation and maintenance deficit" refer to the accumulation of annual operation and maintenance costs in excess of the annual water service payments made under a contract with a particular entity. In the aggregate, the irrigation account of the CVP has a positive balance, although that balance has been eroded during years in which annual operation and maintenance deficits have occurred. The terms "repayment" or "net repayment" refer to the accumulation of the annual water service payments in excess of that applied towards operation and maintenance expenses. The revenues in excess of operation and maintenance expenses is accumulated and applied to reduce the balance of outstanding construction costs.

Under the Component with Individual Contractor Deficits Ratesetting Method, the individual contractor irrigation water rates depend upon the extent and type of services provided by the Bureau of Reclamation (Bureau). The water rate applicable to each contractor consists of a number of cost components (or cost pools) which correspond to the water services provided by the Bureau. Each contractor's water rate consists of a composite of pooled CVP-wide rates, pooled service area rates, and individual rates to recover costs specific to certain contractors.

The cost pooling approach has been used in determining CVP irrigation water rates since the 1940's in accordance with the language of the legislation authorizing the CVP and perpetuated by subsequent legislation which provides for the continuation of the operational and financial integration of the CVP.

There are seven potential cost components that are totaled to determine a contractor's irrigation water rate under the Component with Individual Contractor Deficits Ratesetting Method. These cost components are: water marketing, storage, conveyance, conveyance pumping, San Luis Drain, direct pumping and adjustment for historic individual contractor repayment or deficit balances. The storage, conveyance, conveyance pumping, San Luis Drain and direct pumping components include rates to recover both operation and maintenance (including replacements) expenses and capital costs.

Description of each of the seven potential costs components that are totaled to determine a contractor's irrigation water rate under the Component with Individual Contractor Deficits Ratesetting Method follow:

1. Water Marketing - The water marketing cost component reflects the annual operating expenses of selling (marketing) CVP water. The annual water marketing expenses are pooled CVP-wide and allocated to all paid water for the fiscal year involved.

Paid water includes all CVP supplies to be delivered to the long-term contractors. It excludes water rights, mitigation and other such water deliveries. Long-term contractors are the CVP contractors who already have long-term water service contracts and others who are expected to continue to receive CVP water on a regular basis pursuant to annual or long-term contracts.

2. Storage - The storage operation and maintenance expense component includes all of the expenses classified as storage, including a pro rata share of the annual administrative and general expense. Storage operation and maintenance expenses are pooled CVP-wide and allocated to all contractors benefitting from CVP storage by calculating a per acre-foot rate using the total paid water stored in facilities operated and maintained by the Bureau during the fiscal year involved.

Storage capital costs are pooled CVP-wide and allocated to all contractors benefitting from CVP storage by calculating a per acre-foot rate using the historic and projected long-term contract deliveries applicable to the 50-year repayment period commencing in 1980.

The storage component also includes the costs of the Folsom Pumping Plant, the San Luis Pumping-Generator facility and the Columbia Mowry

System. These pumping facilities are included in storage as they are utilized to provide services which were eliminated by construction of the applicable storage facilities or because their operations more closely reflect a storage operation than a pumping operation.

3. Conveyance - The conveyance operation and maintenance expense component includes all of the expenses classified as conveyance including a pro rata share of the annual administrative and general expense. Conveyance operation and maintenance expenses are pooled CVP-wide and allocated to all contractors using CVP conveyance by calculating a per acre-foot rate using the total paid water to be transported through conveyance facilities operated and maintained by the Bureau for the year involved.

Conveyance capital costs are pooled CVP-wide and allocated to all contractors benefitting from CVP conveyance service by calculating a per acre-foot rate using the historic and projected long-term contract deliveries applicable to the 50-year repayment period commencing in 1980.

4. Conveyance Pumping - The conveyance pumping component includes all of the costs of the Corning, Tracy and Dos Amigos Pumping Plants and the O'Neill Pumping-Generator facility.

The conveyance pumping operation and maintenance expenses include a pro rata share of the annual administrative and general expense and are allocated to those contractors receiving conveyance pumping services by using a CVP-wide pooled rate per kWh with the difference in allocated costs per acre-foot caused by the varying lift requirements of the pumping plants. The greater the lift requirement, the more energy required to pump each acre-foot of water and the more pumping operation and maintenance expenses allocated to the applicable individual contractor. Separate rates are calculated for each of the pumping plants involved, and the rates for each of the pumping facilities used by a contractor are totaled to determine that contractor's total conveyance pumping operation and maintenance rate.

Conveyance pumping capital costs for each of the four conveyance pumping facilities are allocated to all contractors benefitting from CVP conveyance pumping by calculating a per acre-foot rate for each facility using the historic and projected long-term contract deliveries through each facility during the 50-year repayment period commencing in 1980. The rates for each of the pumping plants used by an individual contractor are totaled to determine each contractor's applicable conveyance pumping capital rate.

A portion of the Tracy Pumping Plant's capital costs and operation and maintenance expenses are assigned to the Friant-Kern/Madera Canal contractors on the basis of the historic and projected deliveries to the Delta Mendota exchange contractors applicable to the 50-year repayment period. These costs and expenses are then allocated among the Friant-Kern/Madera Canal contractors on the basis of their historic and projected Class 1 water deliveries during the 50-year repayment period.

5. San Luis Drain - The San Luis Drain operation and maintenance expense component incorporates all San Luis Drain expenses including a pro rata share of the annual administrative and general expense. The San Luis Drain operation and maintenance expenses are pooled and allocated to the three contractors currently entitled to San Luis drainage service (the Panoche, San Luis and Westlands Water Districts) on the basis of each contractor's San Luis Canal deliveries for the year involved.

San Luis Drain capital costs are allocated to the three contractors currently entitled to San Luis drainage service on the ratio of each contractor's historic and projected long-term San Luis Canal deliveries applicable to the 50-year repayment period to the total of all such deliveries.

6. Direct Pumping - The direct pumping component includes all of the costs applicable to the various canalside relift pumping plants and the other CVP pumping plants not operated by the Bureau including those serving the Bella Vista WD (Wintu pumping plant), Contra Costa WD (Contra Costa, Ignacio, and Clayton pumping plants), Westlands WD (Pleasant Valley pumping plant) and the Cross Valley Contractors (State Delta pumping plant - project use energy costs only).

All of the facilities included in the direct pumping component are operated and maintained at no cost to the Bureau with the exception of the cost of the project use energy provided. The project use energy costs are isolated and charged directly to the individual contractors receiving benefit of the pumping services.

The CVP capital costs applicable to the direct pumping facilities is also charged directly to the individual contractor receiving benefit of the pumping service. Per acre-foot rates are determined for these costs by distributing the capital costs to the historic and projected long-term contract deliveries applicable to the 50-year repayment period.

7. Adjustment for Historic Individual Contractor Repayment or Deficit Balances - This component consists of the net result of the comparison of each contractor's annual water payments with their allocated share of the operation and maintenance expenses for that year. This component reflects the calculation of individual contractor balances starting at the time each long-term contractor first started taking CVP water. The balances in this component indicate the result of individual contractor accounting.

Prior to the enactment of Public Law 99-546, interest was not charged on operation and maintenance deficits. Accumulated annual payments were netted against accumulated annual operation and maintenance charges in order to establish each contractor's net repayment or deficit financial position through September 30, 1985. If the contractor's total payments exceeded the allocated operation and

maintenance expenses through September 30, 1985, the net difference was considered repayment and was applied as a credit in determining the contractor's water service rate. This credit is still applied in subsequent years to the extent that any deficits incurred after September 30, 1985 have been repaid. If the contractor's allocated share of the operation and maintenance expenses exceeded the payments through September 30, 1985, the contractor had an operation and maintenance deficit which increased the contractor's repayment obligation and computed water rate.

Passage of Public Law 99-546 required the calculation of interest on all operation and maintenance deficits accruing on or after October 1, 1985. This necessitated the development and maintenance of individual contractor ledgers showing the operation and maintenance deficit or repayment balance accrued as of September 30, 1985, and the annual interest bearing operation and maintenance deficits (including interest) incurred thereafter. An annual accounting of financial operations will be made by contractor showing the result of that years activities. The annual accounting of operation and maintenance deficits by contractor will include interest accruing on a compound basis at rates determined in accordance with the interest rate criteria contained in Public Law 99-546. Annual interest calculations are simplified by using a composite interest rate method which reflects the weighted average of the various annual contractor deficits and applicable interest rates.

The Region has decided to accept, and encourage, voluntary payments from individual contractors to avoid operation and maintenance deficits and has developed implementing procedures for accepting, handling and applying voluntary payments. These procedures allow the contractors to avoid incurring interest on operation and maintenance deficits so long as voluntary payments are made in accordance with the Region's established voluntary payment procedures.

The Component with Individual Contractor Deficits Ratesetting Method applies all annual water revenues by individual contractor in the following priority:

- Current operation and maintenance expenses
- Interest expenses
- Interest-bearing operation and maintenance deficits
- Non-interest bearing operation and maintenance deficits
- Capital repayment

WATER RATE CALCULATIONS

Using the methods and procedures previously described, water rates for each component and CVP long-term contractor are calculated annually. Pending final approval, the Component with Individual Contractor Deficits Ratesetting Method has been used on an interim basis to calculate individual contractor CVP water rates for the 1984, 1985, 1986, 1987 and 1988 water years.

Upon final approval, the Component with Individual Contractor Deficits Ratesetting Method will be used to calculate all CVP irrigation cost-of-service and RRA full-cost water rates. These rate determinations include provisions for annual operation and maintenance expenses, amortized rates for the applicable construction costs and rates to recover any accumulated O&M deficits (including interest pursuant to Section 106 of Public Law 99-546) and adjustments for individual contractor repayments to date. The full-cost rate also includes an interest charge on unpaid capital costs in accordance with the RRA.

A copy of the schedule showing the 1988 Full O&M, Cost-of-Service and Full Cost water rates by CVP contractor is attached.

PN: J.130/1
09/23/87 (12P/61L)

IRRIGATION
FULL O&H, COST OF SERVICE
AND FULL COST (INCLUDING FULL O&H) WATER RATES PER ACRE-FOOT
BY CONTRACTOR FOR 1988

Facility/Contractor	Irrigation Water Rate Per Acre-Foot		
	Full O&H	Cost of Service	Full Cost (Including Full O&H)
		203 (A)	203 (B)
Sly Park D & R El Dorado ID	\$1.11	\$1.04	\$101.49
Folsom D & R San Juan Suburban WD	1.79	3.66	10.84
Suchanan Unit Chowchilla WD La Branza WD	1.79 1.79	3.72 3.65	12.54 27.61
Hidden Unit Hadera ID	1.79	3.74	15.20
Black Butte Stoney Creek WD 4-E WD	1.79 1.79	3.81 3.79	8.70 12.10
Placer County Water Agency	1/	1/	1/
Sugar Pine Reservoir Foreathill PUD	.11	4.75	22.75
Sacramento River Amen, II Anderson-Cottonwood ID Anderson Farm Co Anderson, R & J Andreotti, O Arnold, H (Trustee) Buckley, R & O Butler, L & H Cannell, F & H Carter, R & J	1.79 1.79 1.79 1.79 1.79 1.79 1.79 1.79 1.79 1.79	2.93 3.60 3.73 3.62 3.62 3.88 3.00 3.54 3.76 3.63	10.30 10.41 11.33 10.38 10.63 11.88 10.03 10.74 11.23 12.04

CVP IRRIGATION
FULL O&M, COST OF SERVICE
AND FULL COST (INCLUDING FULL O&M) WATER RATES PER ACRE-FOOT
BY CONTRACTOR FOR 1988

Facility/Contractor	Irrigation Water Rate Per Acre-Foot		203 (A)	203 (B)
	Full O&M	Cost of Service		
Chaplin, M, L & D	1.79	3.27	9.04	11.28
Cheaney, C	1/	1/	1/	1/
Chicago Almond	1/	1/	1/	1/
Christlieb, W	1/	1/	1/	1/
Clark, P - Brewer, A	1.79	3.61	9.12	11.39
Collier, T - McDermott	1.79	3.53	8.22	10.08
Colusa Irrigation Co	1.79	3.61	8.48	10.47
Colusa Properties Inc	1.79	3.68	8.75	10.84
Cribari, E & E	1.79	3.47	8.02	9.81
Daniell, H & B	1.79	3.44	7.90	9.65
Davis, C & H	1/	1/	1/	1/
Davis, O - Roseberry, F	1.79	3.69	8.77	10.90
Dean, C & R	1.79	3.81	9.38	11.77
Diamond Intern'l Corp	1/	1/	1/	1/
Driscoll Strawberry	1.79	3.72	8.85	11.01
Driver, G & S	1.79	2.91	6.12	7.09
Driver, J & C	1.79	3.70	8.70	10.79
Eggleston, K & I	1/	1/	1/	1/
Erke, A & B	1.79	3.63	8.70	10.79
Fargo, P - Haggerty, M	1.79	3.64	8.56	10.58
Fong Sacto Fruit Ranch	1.79	3.60	8.43	10.41
Frangus (Alias)	1/	1/	1/	1/
Freeman, P & V	1.79	3.35	8.55	10.57
Furlan, A & A	1.79	3.71	8.86	11.00
Furlan, E & S	1.79	3.47	8.47	10.46
German, H & B	1.79	3.36	7.65	9.26
Gillaspay, F	1.79	3.79	9.15	11.44
Giusti, A & E	1.79	3.37	7.76	9.43
Giusti, F & N	1.79	3.59	8.39	10.35
Glenn Colusa ID	1.79	3.57	8.33	10.26
Green Island Farau	1.79	3.20	8.58	10.63
Griffin, J C	1.79	3.73	8.89	11.06
Hale, J - Marks, A	1.79	3.44	7.98	9.76
Hanka, G A & Sons	1.79	3.53	8.28	10.19
Hamon, H	1/	1/	1/	1/
Herdhey, F (Estate of)	1.79	3.77	9.04	11.28
Hlatt, G & H	1.79	3.65	8.62	10.68
High-Low Nursery	1/	1/	1/	1/
Hunter, K & H	1.79	3.59	8.57	10.58
Huoston, E - Chalmers, L	1.79	3.57	8.36	10.30
Hyman, D	1/	1/	1/	1/
Kaiser Development Corp	1/	1/	1/	1/
Kary, Carol	1/	1/	1/	1/
Krejca, L	1/	1/	1/	1/
Lamb	1/	1/	1/	1/

**IRRIGATION
FULL O&M, COST OF SERVICE
AND FULL COST (INCLUDING FULL O&M) WATER RATES PER ACRE-FOOT
BY CONTRACTOR FOR 1988**

Facility/Contractor	Irrigation Water Rate Per Acre-Foot		
	Full O&M	Cost of Service	Full Cost (Including Full O&M)
	203 (B)	203 (A)	203 (B)
Lerner, W & V	1.79	3.67	8.71
Lauppe, B & K	1.79	3.37	8.59
Lauppe, H & V	1.79	3.56	9.31
Leal, Robert	1.79	3.61	8.51
Leiser, W	1/	1/	6.98
Lewis, J & W	1.79	3.76	9.00
Lovitch, P & R	1.79	2.86	8.66
Lovorn, W & H	1.79	1.61	1.71
M & T Inc	1.79	3.80	9.24
MCM Properties, Inc	1.79	3.68	8.77
Martin, P	1/	1/	1/
Maxwell ID	1.79	3.79	9.08
Mayfair Farms Inc	1.79	2.71	5.48
McLane, R & N	1.79	3.49	8.06
McLaughlin, J & M	1/	1/	1/
Meridian Farms WC	1.79	3.65	8.62
Micke, D & N	1.79	3.45	7.91
Morehead, J	1/	1/	1/
Morey, R & I	1/	1/	1/
Moroni, R & A	1.79	3.44	8.89
Munson, J & D	1.79	3.55	8.43
Munson, Nina	1.79	3.79	9.17
Nacomas Central MHC	1.79	3.56	8.32
Nelson, T & H	1.79	3.53	8.62
Newhall Land & Farming	1.79	3.54	8.55
OJI Brothers Farm Inc	1.79	3.71	8.85
OJJ, M & Y	1.79	3.70	8.81
Fulger Mutual WC	1.79	3.58	8.47
Penner, H & A	1.79	3.49	8.06
Pires, I. & B	1.79	3.86	9.20
Pleasant Grv-Vrnn MHC	1.79	3.74	8.93
Princeton-Codora-Glenn	1.79	3.59	8.43
Provident ID	1.79	3.72	8.85
Ramos, M	1.79	3.70	8.86
Ramsey, B	1.79	3.71	9.05
Recl. Dist. #1004	1.79	3.69	8.55
Recl. Dist. #108	1.79	3.63	8.74
Reel, C & H	1.79	3.62	8.51
Regents of U of CA	1.79	3.55	8.32
Reische, C & N	1.79	3.79	9.15
Richter, H & A Brus.	1.79	3.62	8.74
Ritchey, E & A	1/	1/	1/
River Garden Farms Co.	1.79	3.70	8.77
Roberts Ditch Irr Co	1.79	3.73	8.89

CVP IRRIGATION
 FULL O&M, COST OF SERVICE
 AND FULL COST (INCLUDING FULL O&M) WATER RATES PER ACRE-FOOT
 BY CONTRACTOR FOR 1988

Schedule 1
 Pg. 4 of 8

Facility/Contractor	Irrigation Water Rate Per Acre-Foot		
	Full O&M	Cost of Service	Full Cost (Including Full O&M)
		203 (A)	203 (B)
Russell, C	1.79	-.05	5.26
Russell, Clayton	1.79	3.92	9.61
Sartain MMC	1.79	3.29	7.45
Seaver, H, C & B	1.79	3.77	9.50
SAFOR	1.79	3.40	8.93
Stafford, H & E	1.79	3.75	9.42
Stanghellini, G & Pava	1/	1/	1/
Steidlmayer, F & A	1.79	3.76	9.34
Sutter MMC	1.79	3.58	8.39
Swinford Tract Irr Co	1.79	3.73	8.96
Thompson, M	1.79	3.51	8.17
Tisdale Irr & Drain Co	1.79	3.58	8.39
Title Ins & Trust Co	1.79	3.70	8.77
Tomlinson, F & D	1.79	3.48	8.10
Tuttle, C	1/	1/	1/
Van Ruiten, G Jr & C	1.79	3.40	7.94
Van Ruiten, G Sr & H	1.79	3.12	8.66
Verona Farming Ptnrshp	1.79	3.61	8.66
Wallace Construction Co	1.79	3.67	8.71
Wells, J	1.79	3.58	8.39
Westfall, R - Noonan	1.79	3.45	9.08
Wilbur, R	1.79	3.70	8.77
Williams, G. W.	1/	1/	1/
Wilson, M	1/	1/	1/
Woodland Farms Ltd	1.79	3.63	8.55
Yerxa, M & C - Halvey	1.79	3.46	7.97
Young, R & R	1.79	3.60	8.47
Zuevalt Orchards Inc	1.79	3.73	8.89
Feather River Feather WD	1.79	3.75	13.84
Colusa Basin Drain	1.79	3.97	9.61
New Helonew D&R Central San Joaquin WD Stockton East WD	1/	1/	1/
	1/	1/	1/

CVP IRRIGATION
FULL O&M, COST OF SERVICE
AND FULL COST (INCLUDING FULL O&M) WATER RATES PER ACRE-FOOT
BY CONTRACTOR FOR 1988

Facility/Contractor	Irrigation Water Rate Per Acre-Foot		
	Full O&M	Cost of Service	Full Cost (Including Full O&M)
	203 (A)	203 (A)	203 (B)
Friant Kern Canal-Class 1			
Arvin Edison WSD	6.70	11.99	47.96
Delano-Earlimart ID	6.70	12.29	33.86
Exeter ID	6.70	12.35	38.09
Garfield ID	6.70	12.40	35.40
International WD	6.70	12.79	32.53
Ivanhoe ID	6.70	12.44	37.75
Kings County WD (T)	1/	1/	1/
Lewis Creek WD	6.70	12.74	49.61
Lindmore ID	6.70	12.39	34.70
Lindsay-Stratmore ID	6.70	12.45	32.65
Lower Tule River ID	6.70	11.88	32.63
Orange Cove ID	6.70	12.52	30.89
Porterville ID	6.70	12.28	32.46
Sausalito ID	6.70	12.38	36.41
Shafter-Wasco ID	6.70	12.33	36.50
So. San Joaquin MUD	6.70	12.34	34.30
Stone Corral WD	6.70	12.42	37.24
Tea Pot Dome WD	6.70	12.52	41.60
Terra Bella ID	6.70	12.52	34.02
Tulare ID	6.70	11.97	32.77
Madera Canal-Class 1			
Chowchilla WD	6.70	12.44	34.83
Madera ID	6.70	12.37	36.77
Friant Kern Canal-Class 2			
Arvin Edison WSD	3.31	6.41	32.17
Delano-Earlimart ID	3.31	6.33	17.81
Exeter ID	3.31	6.20	21.56
Fresno ID	3.31	6.28	16.81
Ivanhoe ID	3.31	6.37	21.44
Lindmore ID	3.31	6.29	18.62
Lower Tule River ID	3.31	6.25	16.33
Porterville ID	3.31	6.38	16.44
Sausalito ID	3.31	6.26	20.11
Shafter-Wasco ID	3.31	6.39	20.28
So. San Joaquin MUD	3.31	6.34	18.16
Tulare ID	3.31	6.25	17.10

IRRIGATION
 FULL COST OF SERVICE
 AND FULL COST (INCLUDING FULL O&M) WATER RATES PER ACRE-FOOT
 BY CONTRACTOR FOR 1988

Facility/Contractor	Irrigation Water Rate Per Acre-Foot		
	Full O&M	Cost of Service	Full Cost (Including Full O&M)
		203 (A)	203 (B)
Hadera Canal-Class 2			
Chowhilla WD	3.31	6.42	14.08
Gravelly Ford WD	3.31	5.41	11.98
La Branza WD	3.31	5.79	23.88
Hadera ID	3.31	6.40	15.32
Delta Mendota Canal			
Banca Carbona ID	6.56	12.36	26.56
Broadview WD	6.56	12.24	27.66
Centimella WD	6.56	11.37	25.05
Davis WD	6.56	12.14	26.31
Del Puerto WD	6.56	12.14	26.23
Eagle Field WD	6.56	12.23	26.18
Foothill WD	6.56	12.34	26.66
Hospital WD	6.56	12.18	26.11
Kern Canon WD	6.56	12.12	25.97
Mercy Springs WD	6.56	12.20	26.37
Mustang WD	6.56	12.28	26.42
Orestimba WD	6.56	12.35	26.58
Oro Loma WD	6.56	12.32	26.48
Pacheco WD	6.56	11.61	27.74
Panoche WD	6.56	11.98	25.61
Patterson WD	6.56	12.23	26.34
Plain View WD	6.56	12.13	26.84
Quinto WD	6.56	12.31	26.54
Romero WD	6.56	12.07	26.04
Salado WD	6.56	12.23	26.24
San Luis WD	6.56	11.93	25.72
Sunflower WD	6.56	12.15	26.11
West Stanislaus ID	6.56	12.39	28.00
Westside ID	6.56	11.33	25.12
Widren WD	6.56	12.15	26.20

CVP IRRIGATION
FULL O&M, COST OF SERVICE
AND FULL COST (INCLUDING FULL O&M) WATER RATES PER ACRE-FOOT
BY CONTRACTOR FOR 1988

Facility/Contractor	Irrigation Water Rate Per Acre-Foot		
	Full O&M	Cost of Service	Full Cost (Including Full O&M)
	203 (A)	203 (A)	203 (B)
Delta Mendota Pool			
Casper, C (T Ranch)	6.56	12.19	26.27
Fresno Slough WD	6.56	12.04	25.95
Hughes, M & M	6.56	11.94	25.13
Jamez ID	6.56	12.13	26.09
Laguna ID	6.56	11.15	24.29
Recl. Dist. #1606	6.56	12.26	25.82
Tranquillity ID	6.56	12.43	27.03
Westlands WD	6.56	11.13	32.23
Corning Canal			
Corning WD	6.47	16.12	42.64
El Camino ID (T)	1/	1/	1/
Klder Creek WD	5.49	11.98	24.97
Proberta WD	5.65	13.08	32.71
Rawson WD (T)	1/	1/	1/
Thomas Creek WD	5.49	12.18	25.56
San Luis Canal			
Pacheco WD	7.93	13.25	27.91
Panoche WD	8.43	14.27	29.60
Pleasant Valley WD (T)	1/	1/	1/
San Luis WD	9.12	18.63	51.89
Westlands WD	8.85	15.80	42.30
Cross Valley Canal			
County of Fresno	7.12	12.56	25.57
County of Tulare	7.12	12.39	25.77
Ducor ID	7.12	12.50	25.33
Hills Valley ID	7.12	12.61	26.12
Kern-Tulare ID	7.12	12.60	25.41
Lower Tule River ID	7.12	12.52	25.38
Pitley ID	7.12	12.49	25.40
Rag Gulch WD	7.12	12.54	25.03
Tri Valley ID	7.12	12.46	25.26
San Felipe Unit			
San Benito FC & WCB	8.96	15.26	29.61
Santa Clara WD	9.87	16.37	30.76

1/ No Projected water deliveries for 1988.